TABLE 1a. rent rebuilding parameter/target estimates specified for overfished west c... groundfish: shelf species. May 30, 2002

Rebuilding Parameter/Target	Shelf rockfish & lingcod				
	Cowcod [1/]	Bocaccio [2/]	Canary [3/]	Yelloweye [4/]	Lingcod [5/]
T_0 (year declared overfished)	2000	1999	2000	2002	1999
T_{MIN} (minimum time to achieve B_{MSY}; F = 0)	62 years	97 years	57 years	***15-208 years N CA*** ***15-104 years OR-WA***	3.6 years N 4.8 years S
Mean generation time	37 years	12 years	19 years	***28 years N CA*** ***32 years OR-WA***	*X* years
T_{MAX} (maximum time to achieve B_{MSY})	98 years	109 years	76 years	***43-236 years N CA*** ***47-136 years OR-WA***	10 years
P_{MAX} (P to achieve B_{MSY} by T_{MAX}) [6/]	55%	*X*%	*X*%	*X*%	60%
Most recent stock assessment	Butler *et al.* 1999	MacCall 2002	Methot and Piner 2002	Wallace 2001	Jagielo *et al.* 2000
Most recent rebuilding analysis	Butler and Barnes 2000	MacCall 2002	Methot and Piner 2002	Wallace 2002	Jagielo and Hastie 2001
B_0 (estimated unfished biomass)	3,367 mt	*14,857 B eggs in 2002*	*31,550 mt*	*602-860 s.o. N CA* *1,440-1,596 s.o. OR-WA*	22,882 mt N 20,971 mt S
$B_{CURRENT}$ (current estimated biomass)	238 mt in 1998	*713 B eggs in 2002*	*2,524 mt in 2002*	*72.4 s.o. N CA* *236.1 s.o. OR-WA* *in 2001*	3,527 mt N 3,220 mt S in 2000
$B_{CURRENT}$ % Unfished Biomass	7% in 1998	*4.8% in 2002*	*8% in 2002*	*8%-12% N CA* *15%-16% OR-WA* *in 2001*	17% N 15% S in 2000
MSST (minimum stock size threshold = 25% of B_0)	842 mt	*3,714 B eggs*	*7,888 mt*	***602-860 s.o. N CA*** ***1,440-1,596 s.o. OR-WA***	5,720 mt N 5,243 mt S
B_{MSY} (rebuilding biomass target = 40% of B_0)	1,350 mt	*5,943 B eggs*	*12,713 mt*	***241-344 s.o. N CA*** ***576-638 s.o. OR-WA***	9,153 mt N 8,389 mt S
MFMT (maximum fishing mortality threshold = F_{MSY})	$F_{50\%}$	$F_{50\%}$	$F_{73\%}$	$F_{50\%}$: ***F = 0.042 in N CA*** ***F = 0.034 in OR-WA***	$F_{45\%}$: F = 0.12 N F = 0.14 S
Harvest control rule [6/]	F = 0.0136	***F = 0.0X***	***F = 0.0X***	***F = 0.0X***	F = 0.053 N F = 0.061 S
T_{TARGET} [6/]	2095	*2XXX*	*20XX*	*2XXX*	2009

Exhibit C.5
Supplemental Revised Attachment 1
June 2002

[1/] Cowcod were assessed in the Conception area. All parameters/targets are for the Conception area, although cowcod retention is prohibited throughout its range.
[2/] Bocaccio were assessed in the Conception and Monterey INPFC areas combined in 2002. The assessment (MacCall 2002) has been approved by a STAR Panel but has not undergone full SSC review. Biomass estimates are in billions of eggs. A rebuilding analysis is still in development and awaits Council adoption. All data for 2002 still considered preliminary.
[3/] A coastwide canary rockfish assessment (Methot and Piner 2002) has been approved by a STAR Panel but has not undergone full SSC review. A rebuilding analysis is still in development and awaits Council adoption. All data for 2002 still considered preliminary.
[4/] Yelloweye rockfish were assessed as two stocks: northern California (N CA; Monterey INPFC area north to the California/Oregon border) and Oregon (OR; waters off Oregon) Assessment assumed a B_{MSY} target of 50% of B_0. Biomass estimates are in spawning output units (s.o.) calculated as the weighted age x the net maturity function. A rebuilding analysis is still in development. All data for 2002 still considered preliminary.
[5/] West coast lingcod were assessed as two stocks north (Columbia and U.S.-Vancouver INPFC areas) and south (Eureka, Monterey, and Conception INPFC areas).
[6/] Under *Council Interim Rebuilding* except bocaccio, canary rockfish, and yelloweye rockfish.

TABLE 1b. Current rebuilding parameter/target estimates specified for overfished west coast groundfish: slope and midwater species. **May 30, 2002**

Rebuilding Parameter/Target	Slope rockfish		Midwater species	
	Darkblotched	POP	Widow [1/]	Pacific whiting [2/]
T_0 (year declared overfished)	2000	1999	2001	2002
T_{MIN} (minimum time to achieve B_{MSY}; F = 0)	14 years	12 years	22 years	***2*** years
Mean generation time	33 years	30 years	16 years	***8*** years
T_{MAX} (maximum time to achieve B_{MSY})	47 years	42 years	38 years	***10*** years
P_{MAX} (B_{MSY} by T_{MAX}) [3/]	70%	70%	60%	***X***%
Most recent stock assessment	Rogers *et al.* 2000	Ianelli *et al.* 2000	Williams *et al.* 2000	Helser *et al.* 2002
Most recent rebuilding analysis	Methot and Rogers 2001	Punt and Ianelli 2001	Punt and MacCall 2002	***Helser 2002***
B_0 (estimated unfished biomass)	29,044 mt	60,212 units of spawning output	34,900 mt in 2000	5.25 M mt
$B_{CURRENT}$ (current estimated biomass)	4,067 mt in 2002	13,066 units of spawning output in 1998	8,223 mt in 2000	1.26 M mt in 2002
% Unfished Biomass	14% in 2002	21.7% in 1998	23.6% in 2000	20% in 2001; 24% in 2002
MSST (minimum stock size threshold = 25% of B_0)	7,261 mt	15,053 units of spawning output	8,725 mt	1.31 M mt
B_{MSY} (rebuilding biomass target = 40% of B_0)	11,618 mt	24,084 units of spawning output	13,960 mt	2.1 M mt
MFMT (maximum fishing mortality threshold = F_{MSY})	$F_{50\%}$	$F_{50\%}$	$F_{50\%}$	$F_{40\%}$
Harvest control rule [3/]	F = 0.029	F = 0.0***X***	F = 0.0***X***	***F = 0.0X***
T_{TARGET} [3/]	2034	2027	20***39***	20***XX***

[1/] The widow rockfish stock was assessed in 2000. A revised rebuilding analysis (Punt and MacCall 2002) is awaiting Council adoption. Some data for 2002 still considered preliminary. *Council Interim Rebuilding* not specified or subject to change (highlighted specifications) pending adoption of the revised rebuilding analysis.
[2/] The Pacific whiting stock was assessed in 2002. Biomass estimates are in millions of mt of age 3+ fish. A rebuilding analysis (Helser 2002) is still in development and awaits Council adoption. Some data for 2002 still considered preliminary or unspecified.
[3] Under *Council Interim Rebuilding.*